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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,917	05/23/2002	Marc Schaepkens	RD-28965	4407

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH CENTER
PATENT DOCKET RM. 4A59
PO BOX 8, BLDG. K-1 ROSS
NISKAYUNA, NY 12309

EXAMINER	
XU, LING X	
ART UNIT	**PAPER NUMBER**
1775	

DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/063,917	SCHAEPKENS, MARC
	Examiner	Art Unit
	Ling X. Xu	1775

-- The MAILING DATE f this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-107* is/are pending in the application.

4a) Of the above claim(s) *60-103* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-22,24,26-38,40-56,58 and 104-107* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I and II in Paper No. 4 is acknowledged. The traversal is on the ground(s) that the search and examination of a barrier layer for an article and a method of making the barrier layer does not impose a serious burden upon the Examiner. This is not found persuasive because, the search required for product claims is not required for the method claims. The product and method claims are classified in two different classes. The product is classified in Class 428, which includes stock materials and miscellaneous articles. The method is classified in Class 427, which includes coating process. Class 428 and Class 427 include very different subject matters and are examined by different groups of examiners with different expertise. Therefore, in order to ensure the prosecution quality, the product claims and method claim should be searched and examined separately by examiners with different expertise.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

2. Claims 24 and 58 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 24 and 58 recite the polymeric substrate comprises polyethylene terephthalate, a polyethylene naphthalate and a polyacrylate, which were not recited in the independent claims 1 and 37, respectively. Accordingly, claims 24 and 58 fail to further limit the subject matter of the previous claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 38, and 105-106 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 2 and 38, the location of the further included layer is confusing because it is on the barrier layer and opposite to the polymeric substrate. Since barrier layer is on one side of the substrate, it is unclear if the further included layer is on the side or opposite side of the barrier layer.

In claims 105-106, it is unclear if the organic polymer includes the compounds of epoxide, acrylate, acrylonitrile, xylene, and styrene.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-2, 4-22, 24, 26-38, 40-56, 58 and 104-107 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (US 6,198, 217) in view of Ikai et al.(US 6,015,951).

Suzuki discloses an organic EL unit covered with a protective double layer made of an organic barrier layer and an inorganic barrier layer (Abstract).

With respect to claims 1, 26 and 37, Suzuki discloses the substrate may be a polymer such as polyethylene or polymethyl methacrylate (Col. 7, lines 50-60).

Suzuki also discloses the thickness of the inorganic barrier layer is 0.1-2 micron (Col. 7, lines 25-30), which is within the claimed range.

Suzuki further discloses the inorganic barrier layer is made of metal oxide and metal nitride such as Si_3O_4 and TiN (Col. 7, lines 15-25).

Since Suzuki discloses the same barrier layer as claimed, the same barrier layer would also has the same properties such as water vapor transmission rate and the oxygen transmission rate as claimed.

With respect to claims 2, 7-8, 10-11, 38, 43-44 and 46-47, Suzuki discloses the EL unit comprises an anode of a conductive material such as indium tin oxide.

Suzuki discloses the electroconductive layer comprises the same component as the claimed abrasion resistant layer and the infrared reflecting layer, the same electroconductive layer can also function as an abrasion resistant layer or an infrared reflecting layer.

With respect to claims 4-5, 40-41, 104 and 107, Suzuki discloses the use of adhesive layer made of epoxy resin between the barrier layer and the substrate (Col. 7, lines 45-60).

With respect to claims 12-14, 16, 26-27, 29, 37, 48 and 50, Suzuki discloses the inorganic barrier layer is made of metal oxide and metal nitride such as Si_3O_4, Si_3N_4 and TiN (Col. 7, lines 15-25).

With respect to claims 17-18, 30-31 and 51-52, the thickness of the inorganic barrier layer is 0.1-2 micron (Col. 7, lines 25-30), which is within the range as claimed.

With respect to claims 19-20, 26, 32-33, 37 and 53-54, as stated above, Suzuki discloses the same barrier layer as claimed, the same barrier layer would also has the same properties such as water vapor transmission rate and the oxygen transmission rate as claimed.

With respect to claims 21 and 55, Suzuki discloses the barrier layer is used in an EL device (abstract).

It is noted that claims 22, 34-36 and 56 are product-by-process claims. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps (MPEP 2113). "[E]ven though product – by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966.

With respect to claims 105-106, Suzuki discloses the EL device comprises an organic protective or sealing layer P made of organic polymer material such as acrylate oligomers, epoxy acrylate oligomers and the like (Col. 6, lines 1-25). Since the protective layer is made of the same material as claimed, the same material would also have the same function such as abrasion resistant as claimed.

With respect to claims 1, 24 and 58, Suzuki does not specify that the substrate being the polymer as claimed.

Ikai teaches that the substrates used for the device can be a transmitting substrate such as plastic film of polyimide, polyether-sulfone, polyethylene terephthalate. Depend on the application; the substrates are also subject to surface treatment (Col. 26, lines 5-22).

Therefore, it would have been obvious to one of ordinary skill in the art to use the substrates as taught by Ikai including the polymers of polyimide, polyether-sulfone, polyethylene terephthalate in order to obtain a transmitting substrate for the photoelectric device.

With respect to claims 9 and 45, Suzuki does not disclose the photoelectric device comprises a UV absorbing layer.

However, adding a UV absorbing layer to the photoelectric device is known in the art.

Ikai teaches a photoelectric transfer device comprise a film composed of a UV absorbing compound such as titanium oxide, zinc oxide, cerium oxide and organic absorbers as well (Col. 31, lines 10-35).

Therefore, it would have been obvious to one of ordinary skill in the art to include a UV absorbing layer in order to absorb UV radiation, protect the device from UV radiation damage and prolong its operational life.

With respect to claims 15, 28 and 49, Suzuki teaches the inorganic barrier layer is made of metal oxide and metal nitride such as Si_3N_4 and TiN (Col. 7, lines 15-25).

Suzuki also teaches these metal oxide and metal nitride exhibit low moisture permeability and are stable against moisture (Col. 7, lines 15-30).

Although Suzuki does not specify the barrier layer comprises titanium oxide in the barrier layer, Suzuki teaches the barrier layer is made of metal oxide and metal nitride, the metal used including silicon and titanium.

Therefore, it would have been obvious to one of ordinary skill in the art to include titanium oxide as one of the metal oxides since titanium oxide, titanium nitride, silicon oxide and silicon nitride are similar inorganic metal oxides and metal nitrides products and they have similar properties, such as low moisture permeability. One skilled in the art would have been motivated to use these product as materials for barrier layer with the expectation that similar product would have similar properties and utilities.

5. Claims 6 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al and Ikai et al., as applied to claims 1-2, 4-5, 37-38, and 40-41 above, and further in view of Kohara et al (US 6,212,057).

As stated above, Suzuki discloses the use of adhesion layer between the barrier layer and the polymeric substrate.

Suzuki and Ikai do not disclose the adhesion layer comprises metal in elemental form and metal compounds recited in claims 6 and 42.

Kohara teaches the use of adhesive film contains at least one metal such as Cr, Ti, Ge, Sn, Mo or metal oxide with theses metals for electronic device because these metals have excellent adhesion for the electronic device. The adhesive film can be formed on a surface of an organic polymer substrate (Col. 5, lines 30-35).

Therefore, it would have been obvious to one of ordinary skill in the art to use adhesive film made of metal or metal oxide as taught by Kohara in the electronic device of Suzuki in order to provide excellent adhesion for the electronic device.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 703-305-0395. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 703-308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Ling X. Xu
Examiner
Art Unit 1775

lx

LX

July 11, 2003

DEBORAH JONES
SUPERVISORY PATENT EXAMINER